

## THE LURE OF MEDICAL HISTORY†

HUGH HUGER TOLAND\*

A SKILLFUL SURGEON—"TOLAND'S LUCK"

VI

By EDGAR LORRINGTON GILCREEST, M.D.  
San Francisco

PART II\*\*

IT has been said of Toland that, "without much originality of conception, he possessed in a marked degree the qualifications we look for in a great surgeon—steadiness of hand and boldness combined with caution." Eminently practical in all that he did, no useless or unnecessary preparations characterized his operations. The rapidity of his execution was remarkable, and was based on his thorough knowledge of anatomy. Few surgeons possessed more manual dexterity. He was cool, imperturbable, and decisive in execution. He had great poise in the midst of an unexpected emergency or eventuality, and "would, when circumstances demanded it, relinquish further procedure without a moments vacillation. As an operator, his success was proverbial: 'Toland's luck,' it was called. But the so-called luck was merited, due to skill."<sup>10</sup>

### COURTEOUS TO HIS CRITICS

He is reputed to have operated successfully on innumerable patients who had been refused as hopeless by others. This, in a large part, explains the jealousy of many of Toland's confrères who were free in their criticisms of him. Although aware of this, he was often generous and courteous to his critics. When the welfare of a patient was likely to be sacrificed by the ignorance of his attending physician, however, Toland's manner was somewhat less polished and more direct, and occasionally he would violate all the rules of medical ethics by refusing to protect a brother practitioner who had called him in consultation. The following story in point was given to me by Dr. Herbert Evans as told to him by his uncle, Dr. Robert McLean: "On one such occasion, when his fellow practitioner was late to a consultation and he could wait no longer, hearing from the patient that his physician's diagnosis was an axillary abscess, Toland pinned to the patient's clothes a scrawled note that he who ran might read, 'Dear Doctor ———: Do not lance this patient's auxiliary abscess, or he will bleed at once to death.' It was, of course, an aneurism."

†A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellaneous department, and its page number will be found on the front cover.

\* One of the papers given in Toland Hall, University of California Medical School, San Francisco, in the series on the history of the institution, arranged by the Division of the History of Medicine.

Read before the Historical Section of the San Francisco Medical Society, January 11, 1938.

This is Paper VI of the series. For other articles in the symposium, see CALIFORNIA AND WESTERN MEDICINE, November, 1937, page 321; December, page 405; January, page 27; February, page 114; March, page 186; April, page 263.

\*\* Part I of this paper appeared in the April issue, on page 263.

### VERSATILITY AS A SURGEON

His operations ran the gamut of general surgery from the head to the toes. As early as 1858 he did trephining, and thyroidectomies, ligated for aneurysms, repaired vesicovaginal fistulae, removed loose cartilages from the knee joint, treated enlarged bursae of the knee joint, did radical bone operations for osteomyelitis and for removal of sequestra, and partial resections of the tongue with ligation of the lingual artery. He also operated on several patients with incarcerated hernia, and on a large double scrotal hernia by invaginating the scrotum on the finger up to the external inguinal ring, and fixing it there with several sutures which were removed when adhesions had formed which prevented the descent of the hernia. In addition, he removed cystic tumors of the breast, treated varicose veins by excision and ligation, and performed iridectomies for glaucoma. It is interesting that Beard of New Orleans and Toland, independently, were the first Americans to perform this operation.

### HIS VASCULAR SURGERY

According to his assistant, Robert A. McLean, surgery owes many valuable discoveries to Toland's genius. He wrote that Dr. Toland discovered "an improved method of ligating arteries by which the danger of secondary hemorrhage was almost entirely eliminated from the after-effects of ligation. I allude to the use of the double ligation. . . . His success in the practice of this method was remarkable. I do not know the exact number of his operations, but I believe that in nearly sixty instances he lost but two cases from secondary hemorrhages."<sup>5,6</sup>

Toland ligated the subclavian artery three times,<sup>6,8</sup> once for axillary aneurysm and twice for aneurysm of the subclavian artery. These two were cases of distal ligation of the vessel, and were alleged to be the only two successful cases reported up to that time. Gross, of Philadelphia, in his book on surgery of that year (1874), reported the cases of nineteen patients all of whom died, seventeen from secondary hemorrhage. Toland reported six instances of ligation of the brachial artery and of these, two were for true aneurysm, three for false aneurysm, and one for a wound. He ligated the femoral artery eight times, three times for true aneurysm, twice for false aneurysm of the popliteal artery, once for a knife wound and twice for secondary hemorrhage. He ligated the external iliac artery ten times, without a death; more often, McLean stated, than any other surgeon. His ninth case was reported in 1878.<sup>9</sup> He ligated the common carotid artery in his office, with the patient in an armchair, and many times performed capital operations with the patient on his office lounge.

### HIS BONE SURGERY

His bone work was perhaps his best. He operated on eleven patients and reported eleven cases of trephining of the cranium up to 1858 with but one death. In 1876, he reported four cases of disease of the temporal bone with caries of the mastoid process, in which operation was successful, several cases of excision and resection of long bones of the upper and lower extremities (in some of

which curettement of the whole tibia, or two and one-half inches of the proximal end of the femur and part of the acetabulum was required), with good functional results, as well as several cases of amputation and resection.<sup>7</sup>

#### HIS ORIGINAL WORK

His most original work in this line was his article, "Reproduction of Bone," published in 1858. In this he reported seventeen cases of removal of diseased bone, and laid great emphasis on the preservation of the periosteum in order that new bone might be reproduced and amputation avoided. He wrote: "As the partial reproduction of bone has long been known, I only claim to have discovered that entire bones and joints are restored by proper management, even under the most unfavorable circumstances: whether they are as perfect as the original is yet to be determined. I know, however, that they possess sufficient strength and motion to subserve the purpose for which they were originally intended."

Duhamel, the discoverer of the osteogenic function of periosteum, had reported in 1739, that, in a case of necrosis of the humerus, the bone had been reproduced after expulsion of the necrosed diaphysis. Larghi, of Verceil, an Italian surgeon, following the theories of Duhamel, had been methodically saving the periosteum in his surgical operations. Ollier, in his textbook of regeneration of bone and subperiosteal resection, wrote he had found in 1858 that even after the removal of femur or humerus, reproduction of bone would occur if the periosteum had been saved, and that the joints would be reproduced if the articular cartilage had been left intact.<sup>8</sup>

#### AN ARDENT DUHAMELITE

Opposed to these views stood the opinions of the great Haller and the immortal John Hunter, both of whom agreed that "the normal periosteum had no bone-producing power" and acted only as "a passive vascular membrane which surrounded and nourished bone." Thus, in the eighteenth century, surgeons became Hallerites or Duhamelites, according to their views on this subject. It is clear that Toland was an ardent Duhamelite, and, like Syme and Macewen in their day, did much in this part of the world to emphasize the importance of conservation of periosteum, and thus prevent the amputation of limbs. Whether he came to his conclusions independently of the work of the European investigators mentioned above, I am unable to say, but this does not minimize the great contributions he made.

He reported three cases of excision of ribs for empyema. These were all drained by insertion into the chest of a silver tube invented in 1856 by Mr. Lindoff, his assistant, at the United States Marine Hospital. Some of these cases were of several years' standing. In these articles he gave a good clinical picture of penetrating wounds of the thorax, with the differential diagnosis, treatment, and prognosis.

#### PLASTIC SURGERY

In reading about his plastic surgery, whether of the nose, the face, the lips or the legs, one is impressed with his basic knowledge of the fundamental principles for success in this domain. He was thoroughly conversant with the pedicle, the sliding, and the Thiersch grafts, and was familiar with the necessity of securing drainage in order to permit the graft to take. From 1865 to 1876 he reported seventeen cases of plastic operations.

He was a very conservative surgeon, to the extent that he taught that "a limb should never be amputated for ulceration of the soft parts, unless disease of either the bone or joint existed, and very seldom even then."

#### GYNECOLOGICAL SURGERY

His gynecological operations ranged from repair of a vesicovaginal fistula to the excision of a fibrous tumor of the cervix of the uterus, and the correction of a prolapsed uterus by means of excising portions of the vagina and bringing the edges of the wound together, so that the caliber of the canal was diminished in proportion to the breadth of the strips removed.

#### LITHOTOMIES

His favorite operation was that for stone in the bladder. According to McLean, "His percentage of cures following lithotomy was higher than any other surgeon. In sixty-four cases of cutting for stone, he lost but two."

#### MEDICAL CONTRIBUTIONS

His formal addresses delivered to his students were simple, dignified and restrained, but replete with sound and lofty ideals. Although his teaching and his enormous practice occupied most of his time, he found opportunity to write seventy-one articles, mostly surgical case reports, a large number of which were published in the *Pacific Medical and Surgical Journal*. A stenographer took, verbatim, his lectures on the principles of surgery, as illustrated from his own experience. The transcriptions of these notes were published in 1877 as a textbook, entitled "Lectures on Practical Surgery," a work that went into its second edition. He did not confine his writings to surgical subjects, but often wrote on the action of drugs: for example, on the use of Monselle's solution (subsulphate of iron) as a hemostatic, and of American hellebore or Indian poke (*veratrum veride*) in slowing the action of the heart, reducing the force of the pulse, and thereby preventing secondary hemorrhage. The subject of syphilis always interested him, and he wrote nine articles on it. Also to be found among his addresses are several historical subjects, one on "The Life and Character of Valentine Mott." Although his articles and textbook were criticized by some of his colleagues, they reveal judgment, versatility, and sincerity. What he lacked in style, was compensated for by his straightforward description of his surgical procedures.

#### DECLINING YEARS

It is unfortunate that Toland, years before his death, did not relinquish his chair of surgery to his

brilliant and gifted pupil and successor, Dr. Robert A. McLean, who became one of the greatest surgeons that San Francisco ever has had. Toland carried on in his dotage after his luster had dimmed, which was, as always, a sad mistake. In those days, however, professors did not resign readily and give younger men with imagination and creative ability a chance. They tenaciously clung to their chairs. They liked to die, so to speak, in harness, and often by that time their successors also had become senile, losing their initiative.\*

In his declining years Toland's lectures became a peculiar combination of his experiences in the days when he "walked the Salpetriere in Paris with the great surgical masters," personal anecdotes, and reminiscences of his controversial differences with his San Francisco confrères, with whom he had carried on a fratricidal war for many years. His chief antagonist and critic was Elias Samuel Cooper, who had organized a medical school in 1858. They were bitter enemies, and no opportunity to clash was lost by either, in private practice or in lawsuit. It must be remembered that this was the militant period of medicine, when feeling ran high. Toland was a strong man and a powerful enemy who gave no quarter and asked none. "There were giants in those days" and Toland was not the least of them.

#### DEATH COMES TO THE GREAT SURGEON OF THE PACIFIC COAST

He had often expressed the hope that he might not die a lingering death. This hope was realized on the morning of February 27, 1880. He was about to go downstairs to begin his day's work, when he fell to the floor and immediately died. No autopsy was performed. It was assumed that he had fainted and then fallen, striking his forehead and thus causing a cerebral hemorrhage. I am informed by some who attended his funeral that it was the largest ever held in San Francisco. Thousands of friends and grateful patients followed his remains to Laurel Hill, where he lies in one of the most stately mausoleums in that cemetery. And there one of his former students went again after many decades to pay his respects, and later told me, "I stood beside his costly marble monument blazoned with legends of his successes and the great reputation he acquired, and the good deeds that enshrine his name, with a deep veneration for the good he had done, and the great accomplishments for which his name now justly stands."

He was survived by a widow, a son, and a stepson. His estate was estimated as amounting to between one and a half and two million dollars, part of which was 15,000 acres of land on the lower Sacramento River.

#### A FRIEND OF ALL MANKIND

In order to evaluate the greatness of any physician it is necessary to bring him into proper alignment with the period of medicine through which he lived, and of which he was a part. In Toland's

day, asepsis in surgery was unknown, and the washing of hands was not even suggested. Pasteur's discoveries were not yet appreciated, and the ideas of Lister, just then being introduced, were considered a joke. Koch had not yet discovered the first germ, nor Roentgen the x-rays. The cause of tuberculosis, syphilis, malaria, typhoid fever, diphtheria, and, in fact, infectious and contagious diseases in general, were still matters of conjecture. These were the days when doctors pronounced; it was a time when medicine was an art, not a science. Little wonder that physicians needed personality to help them in their everyday problems. In their saddlebags they carried none of the armamentarium of the graduates of modern medicine; nevertheless, the great physicians of that day cured some, alleviated the distress of many, and sympathized with all. They were, indeed, the friends of all mankind.

#### BELOVED BY HIS PATIENTS

Years of observation have forced upon me the conclusion that the careful preparation and long years of diversified clinical teaching and laboratory training do not, in many cases, make the doctor and that, perhaps, after all, it is the *man* who is the successful physician. Our young doctors today know little of the tongue and its proper reading, nor is the feel of the pulse impressed upon them. Above all they know little of the art of medicine, though much of its science; and often, the diagnosis having been determined—correctly or incorrectly—they consider their duty to the patient done. They know little of the power of suggestion and the wonders that may be accomplished by personally inspiring their patients. In these aspects of medicine, Doctor Toland was a master and, although his method was often condemned, he cured his patients and retained their veneration. He belonged to a generation of surgeons which is rapidly passing into history. The general surgeon of his day occupied a place in surgical science and in the hearts of the people which the specialist can never fill; and this is one of the dire penalties of specialism.

#### A PATRON OF SCIENCE

Hugh H. Toland, by his ability as a surgeon, his capacity as a teacher, his contributions to the medical and surgical literature of his day, and his dominant personality was, when he came to die, perhaps the most outstanding figure in medicine not only on the Pacific Coast, but in the West. Today we are permitted to obtain a perspective of him and his achievements. As years have grown into decades, and now, as a full half-century has rolled by, his name looms larger than ever, while most of his bitter and shallow contemporaries, who made light of his achievements, have faded into obscurity. His name will rightfully live as that of a patron of science and learning on the Pacific Coast.

384 Post Street.

#### REFERENCES

1. Bancroft: *Chronicles of the Builders of the Commonwealth*. Bancroft. Vol. 7.
2. California Medical Gazette Editorial. A. Roman and Company, San Francisco, pp. 257-259 (Aug.), 1870.

\* This serious folly is being gradually corrected since Sir William Osler in 1905 called the world's attention to it in one of his farewell addresses to America, "The Fixed Period."

3. Keith, Arthur: *Menders of the Maimed*. Henry Frowde, Oxford University Press, 1919.
4. Lyman, George D.: *The Sponge*, *Annals of Medical History*, Vol. 10, No. 4, 460-479.
5. McLean, R. A.: *Clinic of Dr. H. H. Toland. Case of Popliteal Aneurysm. Operation. Death Four Months Afterward from Rupture of Abdominal Aneurysm. Autopsy*. *The Western Lancet*, Vol. 52 (Jan.), 1874.
6. McLean, R. A.: *Idem*. *Case of Left Subclavian Aneurysm Cured by the Distal Ligation*, *Idem.*, 352.
7. McLean, R. A.: *Idem*. *Four Cases of Pirogoff's Amputation*, *The Western Lancet*, 5:6, 1876.
8. McLean, R. A.: *Idem*. *Case of Axillary Aneurysm. Ligation of the Subclavian Artery. Suppuration of the Sac, and Rupture into the Pleural Cavity. Recovery. With Remarks of the Use of the Double Ligation in Aneurysm*. *The Western Lancet*, 7:63, 1878.
9. McLean, R. A.: *Professor Toland's Ninth Case of Ligation of the External Iliac Artery for Aneurysm. Recovery*. *Idem.*, 159.
10. McLean, R. A.: *Valedictory Address*. *The Western Lancet*, 9:440-441 (Dec.), 1880.
11. Osler, William: *Aequanimitas and Other Addresses*. H. K. Lewis, London, 1906, p. 389.
12. Rixford, Emmet: *Early History of Medical Education in California. Address of the President. Transactions of the American Surgical Association*, *Ann. Surg.*, Vol. 80, No. 8, pp. 326-329 (March), 1928.
13. Stillman, J. D. B.: *The Toland Medical College and the University of California*. *California Medical Gazette*, San Francisco, 257-259 (Aug.), 1870.

## ADDENDUM

LIST OF THE CLINICAL CONTRIBUTIONS OF HUGH  
HUGER TOLAND, M.D. (1806-1880)

(For list see back advertising section, page 45 in this issue)

## CLINICAL NOTES AND CASE REPORTS

### HEMOPOIETIC APLASIAS FOLLOWING THE ARSPHENAMINS, WITH TWO CASE REPORTS

By WILLIAM E. GRAHAM, M.D.

AND

NORMAN H. TOPPING, M.D.  
San Francisco

**D**URING the past few years the arsphenamins have been belabored because of untoward results occurring during the treatment of syphilis. Among these unlooked-for complications, changes in the hemopoietic system, due to the arsphenamins, have more and more been frequently mentioned. This increasing accumulation of literature is probably due in part to several masterful articles appearing during 1932. McCarthy<sup>1</sup> and Wilson published a summary of the literature, and cited two cases of symptomatic thrombocytopenic purpura at about the same time that A. B. Love-man<sup>2</sup> also reviewed the literature and added several cases of varied types of blood reactions due to the arsphenamins. These conditions are rare, however. Cole<sup>3</sup> and his coworkers observed only two cases of blood dyscrasias in a total of 338 complications arising in the treatment of 1,212 patients over a ten-year period. Phelps had two cases in 272,354 injections, and Combs one in 4,000 patients. The following two cases have occurred in our antiluetic clinic in some 23,000 injections over a period of six years.

## REPORT OF CASES

**CASE 1.**—T. A., a seaman, white, age forty-two, reported at the outpatient clinic of the Marine Hospital at San Francisco, California, on October 7, 1935, complaining of a penile lesion which had been present, off and on, for the past six months. Blood was obtained for a Wassermann test on that date. The Noguchi antigen was one plus, the cholesterin antigen was four plus, and the Kahn test was positive. The patient stated that he had had no previous treatment. He had gonorrheal urethritis in 1931.

As no contraindications were present, antiluetic therapy was started at once, with prompt healing of the penile lesion. During the course of his outpatient treatment he received twenty-one intramuscular injections of bismuth, totaling 3.15 grams, and twenty-one intravenous injections of neoarsphenamin, totaling 8.55 grams.

On January 15, 1936, however, after receiving his treatment, he complained of nose-bleeds, which had been occurring off and on for the past two weeks. He had also had a cold, with cough, for one week. He was at once sent to the ear, nose, and throat clinic, where a small oozing point was discovered on the septum. The nose was packed with cocain-oxycyanid, the packing being removed on the following day. He returned on January 20, four days after this, when he stated that the bleeding had reappeared and had become almost constant. He was admitted to the hospital on the medical service.

On admission, the patient's only complaints were bleeding from the nose and a cold with coughing. Physical examination revealed the following significant findings:

A moderately obese white male, quite apprehensive, with clotted blood on his lips and bright red blood oozing from his nares.

Eyes: Conjunctiva injected. Definite icteric tint to sclerae. Pupils equal and regular, and react to light and in accommodation. Extra-ocular movements normal.

Nose: Both nostrils filled with fresh blood-clots. Blood oozing from under clots. No bleeding points seen after clots were removed.

Mouth: Lips coated with dried blood. Tongue coated. Petechial spots on palate and on buccal mucous membrane. Pharynx injected and tonsils atrophic. Several ulcerative lesions on uvula and soft palate.

Neck: No adenopathy present.

Heart: Apex impulse in fifth interspace one centimeter outside midclavicular line, rate 68, regular rhythm. No thrills. Soft, blowing systolic murmur heard at aortic area. Blood pressure, 120/80.

Lungs: A few subcrepitant râles heard scattered throughout both lung fields. Otherwise examination was negative.

Abdomen: Obese. No scars, hernias, masses, tenderness, or rigidity. Liver not enlarged or tender. Spleen barely palpable.

Extremities: A few small petechial spots on the right arm and under several fingernails of both hands.

Laboratory work and treatment were immediately started, using the following possibilities as a working diagnosis:

1. Arsenical reaction.
2. Blood dyscrasia.
3. Bacterial endocarditis.

The appended chart indicates the blood picture from day to day, with the accompanying treatment:

## COMMENT

The blood culture was found to be negative, and as there was a history of intensive arsenical treatment for the past three months, it seemed evident that the accompanying blood dyscrasia could be best explained on a basis of neoarsphenamin as the etiologic agent. Due to the marked reduction in polymorphonuclear cells, agranulocytosis was thought of at once. There was, seemingly, one serious discrepancy in this diagnosis,